A MOULD FOR THE PRODUCTION OF NAPHTHALENE BARS FOR USE IN ENTOMOLOGICAL CABINETS

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Abstract

A method for making solid naphthalene bars suitable for placing into troughs around the perimeter of insect collection drawers is here described. The mould consists of a rubber that is flexible enough to enable the easy removal of the solid naphthalene bars and is not affected by naphthalene in the moulten state.

Introduction

The perimeter troughs of insect collection drawers have traditionally been stocked with loose naphthalene crystals. This chemical has been found to be the most effective and cheapest deterant to insect attack in collections. Naphthalene stocks, however, soon diminish, necessitating replacement of the chemical. Such restocking of drawers with loose naphthalene flakes may result in damage to the specimens.

The advantages in using solid naphthalene bars that fit easily into the perimeter troughs is twofold. Firstly, a solid bar or block that slips into the trough minimizes the amount of loose crystals falling into the drawer and possibly onto the actual specimens. Secondly, a higher concentration of naphthalene per unit volume can be placed in the drawers, thus increasing the time interval between restocking.

Method

Template. Before the mould can be made it is necessary to construct a perspex template (wood may be used as an alternative) in which the mould can be formed. Six strips of perspex are cut to represent the size of the naphthalene bars required. Bar lengths of 15 cm have been found the easiest to handle. The width and depth should be slightly less than the width and depth of the drawer trough, thus allowing the naphthalene bars to be placed into position easily. A perspex box is then made with the following measurements: 2 cm longer, 1 cm deeper and 2 cm wider than the six strips when placed on edge and 0.75 cm apart. The six strips are glued or fixed to the inside of the box's base and arranged as above so that a gap of 1 cm is left between the sides, ends and top of the template and the strips. On drying this template is then ready for receiving the rubber compound.

Mould. Silastic (R) E RTV Moldmaking Rubber and the corresponding catalyst, manufactured by Dow Corning, are mixed according to the manufacturer's directions and poured into the template. The use of a fine wire is recommended for the removal of all or as many air bubbles as possible by continual probing whilst the rubber is still in a liquid phase. The template is left for twenty four hours to allow the rubber compound to set. A moderate oven will speed up the setting process.

After the rubber has set, the external walls of the template are removed and the rubber mould is removed from the base and strips of perspex of the template.

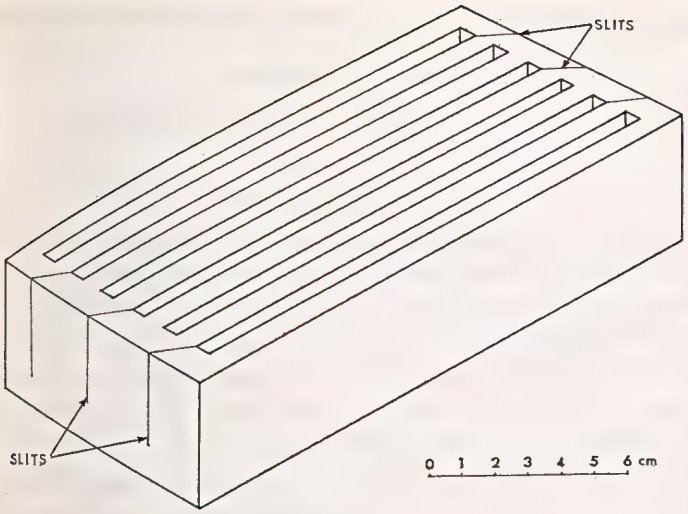

FIGURE 1

Diagram of the completed mould drawn to scale and showing the slits at alternate ends of the troughs for easy removal of the naphthalene bars. The base and walls of the mould should be approximately one centimetre thick for support.

A slit is made at an angle in each trough of the mould, at alternate ends as shown in Fig. 1. These slits are made to the same depth as the troughs in the mould and facilitate the removal of the naphthalene bars. When made with a razor blade, the slits will not allow the liquid naphthalene to escape from the mould.

Naphthalene Bars. Naphthalene crystals are gently heated to 85°C (melting point of naphthalene 80.2°C) in a metal jug or saucepan, on an electric hot plate, preferably in a fume cupboard or a well ventilated area. Once the naphthalene has reached the liquid state it is poured into the mould. The naphthalene is then allowed to cool and set.

Removal of the bars from the mould is dependant on the time taken for the naphthalene to solidify and this time is directly proportional to the width and the depth of the naphthalene contained in the bar. The more naphthalene the longer the time interval needed for cooling. The cooling process can be hastened by placing the mould in a water bath, especially if the mould is being used a successive number of times, as the rubber retains a certain amount of heat from the naphthalene. In a water bath, 5 mm wide bars take approximately five minutes to solidify sufficiently for removal from the mould.

Using this method, a surplus of naphthalene bars can be produced to meet future requirements, and the space required to store the surplus stocks is negligible. The rubber compound is not affected by the naphthalene and remains flexible after considerable use.

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